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EXAMINER

MOTSINGER, SEAN T

ART UNIT

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2624

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/685,463	TAKAHASHI, TETSU	
	<b>Examiner</b>	<b>Art Unit</b>	
	SEAN MOTSINGER	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/10/2007</u> .   | 6) <input type="checkbox"/> Other: _____                          |

***Response to Applicants Arguments***

Applicants arguments/amendments filed on 12/27/2007 have been entered and made of record.

Re the rejection under 112 First and second paragraph to claims 2 and 7, applicants arguments have been considered but are not found persuasive. Applicants amendments do not address the issue of the rejection. Examining figure 4 of the specification the input to the MPEG encoder 10 is in ITU-R656 format not in MPEG format. This conclusion is supported by page 8 of the specification. Furthermore the encoder skips the encoding of the second set of frames. Therefore it does not appear that the second set of frames can be predictive frames because the second set of frames appears to never be predictive encoded at any point. Therefore they cannot be described as predictive-coded frames if they are not encoded because the adjective "predictive-coded" or implies coding by prediction.

Regarding Applicants amendments with respect to the rejections under 35 U.S.C. 102(b), these arguments have been considered but are not persuasive. Applicant appears to argue that Sackstien does not disclose the "a second unit discarding second frames, which lie between two of the first frames in the input video sequence, to cause the encoding unit to skip each second frame and perform predictive coding of a corresponding one of the first frames immediately preceding the second frame". Yet

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applicants arguments appear only to discuss what is disclosed in Sackstein, it is not clear how applicant believes claim 1 is different. The sub –sampling in Sackstien clearly describes discarding a second set of frames which lie between two frames of the first set of frames. The fact that these frames are not sent to the encoder and therefore skipped is also clear from the sub sampling. The next feature is to cause the encoding to "perform predictive coding of a corresponding frame of the first set of frames immediately preceding a frame from the second set of frames." A inserted p-frame indicating all information is included in previous frame as described in Sackstien is a predictive encoding of a corresponding one of the first frames immediately preceding the second frame. It predicts the current frame is the same as the previous frame, therefore it is a second predictive encoding of the first frame, this is done to produce to maintain frame rate.

Regarding the amended portion "reducing the number of frames originally contained in the input video sequence prior to compression." This portion does not overcome the prior art it merely implies that the original video sequence has the number of frames reduced. This is also clearly in Sackstien see page 3 note sub sampling reduces the number of frames. The fact that the encoder later inserts dummy frames at a later point has no bearing on the limitation.

Regarding new claim 13, Claim 13 is believed to contains subject matter not initially discussed in the section of Sackstien quoted. The examiner relied mainly on the prior

art section of Sackstien because it was believed to be closer to applicants invention, as the examiner initial understanding of applicants invention was that it included dummy frames. However in light of claim 13 which appears to exclude the insertion dummy frames (although this is largely unclear see 112 rejections below) because fewer frames are sent to the decoder; the examiner will be relying more on the disclosure of Sackstiens invention rather than the discussion of the prior art included in Sackstien.

***Rejections Under 35 U.S.C. 112 First paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It claims reducing a number of frames to be decoded in the decoder. The examiner understands this to mean that frame rate of the output is slower than the input wherein there are no dummy, repeating frames in the output but a fewer number of frames. However this does not appear to match what applicant has described in his disclosure. On page 13 lines 25-37 applicant describes "As the encoding of the pictures skipped is not preformed the encoding of a corresponding one of the pictures

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left which immediately precedes the skipped picture is preformed instead.” To the examiner this suggests that a second encoding of preceding frame is preformed "instead" of encoding the skipped frame in a similar if not identical manner to the dummy frames described in Sackstien. Furthermore page 14 lines 1-12 also seem to support examiners conclusion i.e. “performs the encoding of the same picture”.

Applicant's amendment and argument seem to reflect a different understanding of this language, the examiner is unclear on applicant's interpretation, and the examiner does not believe that said section is sufficiently clear to convey possession or enablement of said invention.

Claims 2, 7, and 11-13, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 2 and 7 state: “...the second frames which are discarded are predictive-coded pictures contained in the input video sequence.” However in applicants disclosure he describes the input as not coded in a predictive form but in NTSC format. It is unclear how the frames discarded could be “predictive-coded pictures” since they are also never encoded by the encoder. Therefore one of ordinary skill in the art would not be able to make and use the invention as described my claims 2 and 7.

Re Claims 11-12, these claims talk about determining which frames to skip based on the header information these claims rely on page 15 line 8 - page 16 line 9 for support the translation of this section is insufficiently clear to support practice of the claimed invention in claims 11-12. Examiner notes that page 15 states "In the following description, the term "frame" is used in the same meaning as the picture (or video pack)." But also uses the language "the current video pack of the target frame" This makes no sense because if a frame and video pack are the same thing a frame could not have a "current video pack" and/or a "following video pack".

Claim 13 states "each picture having a plurality of frames", this makes no sense, because in the disclosure " the term frame is used in the same meaning as picture." Page 15. This claim element is therefore nonsensical; the examiner believes that applicant may have intended to some how use "group of pictures" or "group of frames." The second element makes no sense for similar reasons, a picture can only have one frame. The last element is also confusing because applicants use of picture and frame is again inconsistent with the specification. Also there are enablement issues caused by the new matter rejection above.

***Rejections Under 35 U.S.C. 112 Second Paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 7, and 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re Claim 2 and 7, Claim 2 and 7 state: "...the second frames which are discarded are predictive-coded pictures contained in the input video sequence." However in applicants disclosure he describes the input as not coded in a predictive form but in NTSC format. It is unclear how the frames discarded could be "predictive-coded pictures" since they are not encoded by the encoder. For the purposes of examination examiner interprets the claim to read: "...the second frames, which are discarded, are pictures contained in the input video sequence."

Re Claims 11-12, these claims talk about determining which frames to skip based on the header information these claims rely on page 15 line 8 - page 16 line 9 for support the translation of this section is insufficiently clear to support practice of the claimed invention in claims 11-12. Examiner notes that page 15 states "In the following description, the term "frame" is used in the same meaning as the picture (or video pack)." But also uses the language "the current video pack of the target frame" This makes no sense because if a frame and video pack are the same thing a frame could not have a "current video pack" and/or a "following video pack".



For the purposes of examination examiner is interpreting claim 11 as to read wherein header information of each of a plurality of frames in the input sequence is read.

For the purposes of examination claim 12 is interpreted as wherein a number of frames is incremented by 1 each time a header indicating a start of frame is located, and a frame is left in the video sequence of if the remainder of the number of frames divided by the predetermined interval is zero.

Claim 13 states "each picture having a plurality of frames", this makes no sense, because in the disclosure " the term frame is used in the same meaning as picture."

Page 15. This claim element is therefore nonsensical; the examiner believes that applicant may have intended to some how use "group of pictures" or "group of frames."

The second element makes no sense for similar reasons, a picture can only have one frame. The last element is also confusing because applicants use of picture and frame is again inconsistent with the specification. Furthermore it is unclear if the "first frame" is a first set of frames as in claim 1 and "a first picture" is unclear. Is a first picture merely a retained picture or is it first in something? Also there are clarity issues caused by the new matter rejection above.

### ***Rejections Under 35 U.S.C. 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sackstein et al. WO 98/45959

Re claim 1, Sackstein discloses an image compression device comprising: an encoding unit performing predictive coding of an input video sequence having a plurality of frames. (See Page 3 15-20.) Note a MPEG encoder is used here. A first unit leaving a first set of frames (see page 3 line 8-10 the first set is the set selected by sub sampling) at predetermined intervals (i.e. predetermined duty cycle in page 3 line 12) in the input video sequence(i.e. video signal page 3 line 11) to cause the encoding unit (page 3 line 13) to perform predictive coding (page 3 line 16 IP encoding is predictive) of the first frames. Note the system is sub-sampled and the sub-sampled signal is compressed therefore a set of frames occurring at predetermined intervals is chosen by a unit, for the purpose of predictive MPEG coding. A second unit discarding a second set of frames (see page 3 line 8-10, the second set is the set not selected by sub sampling), which lie between two of the first set of frames (page 3 line 11, sub sampling implies this) in the input video sequence(i.e. video signal page 3 line 11), to cause the encoding unit (page 3 line 13) to skip each second frame (page 3 line 8-10, sub sampling implies this) and perform predictive coding (page 3 line 16 IP encoding is predictive) of a corresponding one of the first frames immediately preceding the second frame (page 3 lines 17-20). Note in the removed frames are replaced by P-frames which

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denote that all information is contained in the previous frame (predictive coding of a corresponding one of the first frames immediately preceding the second frame). An output unit (see page 5 lines 20-27 note the compressed data is stored so it must be outputted by an output unit) outputting only encoded data (page 5 line 27 MPEG video is encoded data) of the first set of frames created by the encoding unit in association with the first unit as a result of the predictive coding of the entire input video sequence (i.e. complete frame set page 3 line 23). Thereby reducing the number of frames originally contained in the input sequence prior to compression (subsampling page 3 line 11 subsampling prior to compression reduces the number of input frames prior to compression,.

Re claim 2 Sackstein further discloses wherein the first frames that are left are either intra-coded pictures (I-frame) or predictive-coded pictures (P-frame) (i.e. IP encoding) contained in the input video sequence (see Page 3 lines 16 and figure 1 element 50A.) The second set of frames (not selected by the sub sampling see page 3 lines 11-12), which are discarded, are pictures contained in the input video sequence (ie video signal see page 3 line 11).

Re claim 3 Sackstein further discloses wherein the encoded data of the first frames created by the encoding unit is stored in a storage device (ie. Storage area page 5 line 27) having a predetermined storage capacity (All storage devices have a predetermined

capacity) as a result of the predictive coding of the entire input video sequence (i.e. complete frame set see page 3 line 23).

Re claim 4 Sackstein further discloses wherein the encoding unit (encoder 304 figure 3 page 19 line 15), the first unit, the second unit (controller 310 of figure 3 page 19 line 16 these two units are combined in the controller) and the output unit (multiplexer 312 figure 3 page 19 lines 16-17) are arranged in an MPEG2 (see page 1 line 19) encoder (encoding unit 300 figure 3 page 19 line 14) .

Re claim 5 Sackstein discloses wherein the encoding unit (elementary stream encoder 502 figure 6 page 21 line 23-24) and the output unit (multiplexer 506 figure 6 page 21 line 23-24) are arranged in an MPEG2 (see page 1 line 19), encoder (elements 502 and 506 page 21 line 23-24) and the first unit and the second unit are arranged in an external control unit (controller 504 figure 6 page 21 line 23-24) connected to the MPEG2 encoder.

Re claim 6 Sackstein discloses an image compression method comprising the steps of: leaving first set of frames (i.e. the frames selected by sub sampling, page 3 line 11) at predetermined intervals (i.e. predetermined duty cycle page 3 line 12) in an input video sequence (video signal page 3 line 11) having a plurality of frames (this is inherent in video) to cause an encoding unit (page 3 line 13) to perform predictive coding (page 3 line 16 IP coding is predictive) of the first set of frames. Said encoding unit performing

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predictive coding of the input video sequence (See Page 3 lines 15-20.) Discarding a second set of frames (i.e. the frames no selected by sub sampling, page 3 line11), which lie between two frames in the first set of frames (page 3 line 8-10, sub sampling implies this) in the input video sequence, to cause the encoding unit to skip each second frame (i.e. some of the frames are not compressed page 3 lines 9-10) and perform predictive coding of a corresponding one of the first frames immediately preceding the second frame (note in page 3 lines 17-20 the removed frames are replaced by P-frames which denote that all information is contained in the previous frame (predictive coding of a corresponding one of the first frames immediately preceding the second frame)). Outputting (see page 5 lines 20-27, the data is stored somewhere so it must be outputted) only encoded data of the first set of frames (i.e. only the compressed frames page 3 lines 9-10) created by the encoding unit in association with the leaving step (subsampling page 3 line 11) as a result of the predictive coding (IP coding page 3 line 16) of the entire input video sequence.

Re claim 7 Sackstein further discloses wherein the first frames that are left are either intra-coded pictures (I-frame) or predictive-coded pictures (P-frame) (i.e. IP encoding) contained in the input video sequence (see Page 3 lines 16 and figure 1 element 50A.) The second set of frames (not selected by the sub sampling see page 3 lines 11-12), which are discarded, are pictures contained in the input video sequence (ie video signal see page 3 line 11).

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Re claim 8 Sackstein further discloses wherein the encoded data of the first frames created by the encoding unit is stored in a storage device (ie. Storage area page 5 line 27) having a predetermined storage capacity (All storage devices have a predetermined capacity) as a result of the predictive coding of the entire input video sequence (i.e. complete frame set see page 3 line 23).

Re claim 9 wherein the encoding unit (encoder 304 figure 3 page 19 line 15) is arranged in an MPEG2 (page 1 line 19) encoder (encoding unit 300 figure 3 page 19 line 14), and the MPEG2 encoder performs the predictive coding (performed by encoder 304 figure 3 page 19 line 15), the leaving step, the discarding step (performed by the controller 310 figure 3 page 19 line 16), and the outputting step (multiplexer 312 figure 3 page 19 lines 16-17).

Re claim 10 Sackstein further discloses wherein the encoding unit (elementary stream encoder 502 figure 6 page 21 line 23-24) is arranged in an MPEG2 encoder so that the MPEG2 (page 1 line 19) encoder (elements 502 and 506 page 21 line 23-24) performs the predictive coding and the outputting step (multiplexer 506 figure 6 page 21 line 23-24), and an external control unit connected to the MPEG2 encoder is arranged so that the external control unit (see figure 6 element 504 page 21 lines 23-24) performs the leaving step and the discarding step.

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Re claim 11 Sackstein further discloses wherein header information of each of a plurality of frames in the input sequence is read. (each frame in NTSC must have a header indicating the start of the frame which will be necessarily read from the input sequence).

Re claim 13 Sackstien discloses retaining a first frame for each of a plurality of pictures in an input video sequence each (group of?) picture having a plurality of frames (see figure 2 note the first picture in the group of pictures is maintained; discarding frames after the first frame for each respective (group of?) picture in the input video sequence. (see figure 2 note some frames after the first frame are discarded); prediction coding each picture after a first picture (note the frames can be I, P or B encoded page 15 lines 19-26) in the input video sequence using the first frame of a respective preceding picture thereby reducing a number of frames to be decoded. (page15 lines 19-26 does not require artificial multiplication of frames).

### ***Rejections Under 35 U.S.C. 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sackstein in view of examiners official notice.

Re claim 12 Sackstein discloses all of the elements of claim 11. Sackstein does not disclose wherein a number of frames is incremented by 1 each time a header indicating a start of frame is located, and a frame is left in the video sequence of if the remainder of the number of frames divided by the predetermined interval is zero. Sackstein does not disclose specifically how the sub sampling of the frames is implemented, however one of ordinary skill in the art would be well aware of this method One of ordinary skill in the art would know how to sample something periodically by using a remainder, i.e. sub sampling by counting the number of frames and divide by the interval, and select every frame which has a remainder of zero. Therefore it would have been obvious at the time of the invention to combine Sackstein with common knowledge in the art to perform said invention.

### ***References Not Considered***

References that were lined through were lined through because they are entirely in Japanese and the examiner was unable to read any portion of them.

### ***Conclusion***



Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Motsinger  
3/25/2008

***/Jingge Wu/  
Supervisory Patent Examiner, Art Unit 2624***